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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,327	06/09/2006	Mamoru Tsukada	03500.103828.	1626

5514 7590 06/24/2010  
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NEW YORK, NY 10104-3800

EXAMINER
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LU, FRANK WEI MIN

ART UNIT	PAPER NUMBER
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1634

MAIL DATE	DELIVERY MODE
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06/24/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/582,327	<b>Applicant(s)</b> TSUKADA, MAMORU	
	<b>Examiner</b> FRANK W. LU	<b>Art Unit</b> 1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 4-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2 and 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/06, 10/07, 4/08, 9/08, 2/09, and 6/09</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Election/Restrictions***

1. Applicant's election with traverse of Group II, claims 2 and 3 and without traverse of a probe set of Probe Nos. 0 and 1 from Table 1-1 (i.e., SEQ ID Nos: 251 and 252) in the reply filed on March 25, 2010 is acknowledged. The traversal is on the ground(s) that "[T]raversal is on the ground that there would not be undue burden in examining the fifteen groups of claims in a single application. In particular, MPEP § 808 makes clear that in order to require restriction between independent or distinct inventions, reasons for insisting upon a restriction requirement, such as undue burden, must also be shown. In the present instance, it is not believed that there would be an undue burden in examining the claims of Groups I to XV in a single application, since the fifteen groups of claims are not so different as would require a burden on the Examiner that is significantly beyond that of the normal burdens of examination".

The above arguments have been fully considered and have not been found persuasive toward the withdrawal of the restriction requirement nor persuasive toward the relaxation of same such that all Groups I to XV will be examined together because, as shown in the restriction requirement mailed on February 17, 2010, the restriction is not dependent on undue burden in examining the fifteen groups as argued by applicant but is based on that Groups I to XV lack the same or corresponding special technical features. Therefore, the requirement is still deemed proper and is therefore made FINAL. Claims 2 and 3 will be examined.

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***Claim Objections***

2. Claim 3 is objected to because of the following informality: Tables 1-2 to 1-7 and 2-1 to 2-6 should be deleted because applicant does not select the probe set from Tables 1-2 to 1-7 and 2-1 to 2-6.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Enablement

Claims 2 and 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988). *Wands* states at page 1404,

“Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in *Ex parte Forman*. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.”

The nature of the invention

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The claims are drawn to a probe set comprising multiple probes that can be used for identification of an HLA-A allele contained in a specimen wherein each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description. The invention is a class of invention which the CAFC has characterized as “the unpredictable arts such as chemistry and biology.” *Mycogen Plant Sci., Inc. v. Monsanto Co.*, 243 F.3d 1316, 1330 (Fed. Cir. 2001).

#### The Breadth of The Claims

Claim 2 encompasses a probe set comprising multiple probes that can be used for identification of an HLA-A allele contained in a specimen wherein each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description. Claim 3 further limits claim 2 and requires that the probe set comprises SEQ ID NOs: 251 and 252.

#### Working Examples

The specification provides probes for identification of HLA-A alleles (see working examples 1 and 2 in pages 2-86 of US 2010/0028861 A1 which is US publication of this instant application). The specification provides no working example for identification of HLA-A alleles using the probe set comprising SEQ ID NOs: 251 and 252 in any kind of hybridization condition.

#### The Amount of Direction or Guidance Provided and The State of The Prior Art

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Although the specification provides probes for identification of HLA-A alleles (see working examples 1 and 2 in pages 2-86 of US 2010/0028861 A1 which is US publication of this instant application), the specification does not provide a guidance to show that HLA-A alleles can be identified using the probe set comprising SEQ ID NOs: 251 and 252 in any kind of hybridization condition. Furthermore, there is no experimental condition and/or experimental data in the specification to support the claimed invention. During the process of the prior art search, the examiner has not found any prior art which is related to identification of HLA-A alleles using the probe set comprising SEQ ID NOs: 251 and 252 in any kind of hybridization condition.

Level of Skill in The Art, The Unpredictability of The Art, and The Quantity of Experimentation Necessary

While the relative skill in the art is very high (the Ph.D. degree with laboratory experience), there is no predictability whether HLA-A alleles can be identified using the probe set comprising SEQ ID NOs: 251 and 252 in any kind of hybridization condition. Since SEQ ID NOs: 251 and 252 are about 81% identical to the fully complementary strands of human Neurl1B mRNA and human FLJ45422 mRNA respectively (see the sequencing comparison between SEQ ID NO: 251 and human Neurl1B mRNA and the sequencing comparison between SEQ ID NO: 252 and human FLJ45422 mRNA), SEQ ID NOs: 251 and 252 can nonspecifically hybridize with human Neurl1B gene and human FLJ45422 gene respectively in some hybridization condition. Therefore, it is impossible to identify HLA-A alleles in a specimen using the probe

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set comprising SEQ ID NOs: 251 and 252 in any kind of hybridization condition without involving a nonspecific hybridization problem.

In view of above discussions, the skilled artisan will have no way to predict the experimental results. Accordingly, it is concluded that undue experimentation is required to make the invention as it is claimed. The undue experimentation at least includes to test whether HLA-A alleles in specimen can be identified using the probe set comprising SEQ ID NOs: 251 and 252 in any kind of hybridization condition.

### Conclusion

In the instant case, as discussed above, the level of unpredictability in the art is high, the specification provides one with no guidance that leads one to claimed methods. One of skill in the art cannot readily anticipate the effect of a change within the subject matter to which the claimed invention pertains. Thus given the broad claims in an art whose nature is identified as unpredictable, the unpredictability of that art, the large quantity of research required to define these unpredictable variables, the lack of guidance provided in the specification, the absence of any working examples related to claimed invention recited in claims 2 and 3 and the no teaching in the prior art balanced only against the high skill level in the art, it is the position of the examiner that it would require undue experimentation for one of skill in the art to perform the method of the claim as broadly written.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 2 is rejected as vague and indefinite because it is unclear what sequence can be called as a sequence of each allele in an allele list in the description. Please clarify.

8. Claim 2 recites the limitation “the description” in the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Arguello *et al.*, (Proc. Natl. Acad. Sci. USA, 93, 10961-10965, 1996).

The rejection is made in view of the ambiguity of claim 2 (see above rejection under 35 USC 112, second paragraph).

Regarding claim 2, Arguello *et al.*, teach a probe set comprising multiple probes (ie., the probes 13 and 16 for HLA-A allele) that can be used for identification of an HLA-A allele contained in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description (see Table 1 in page 10961 and page 10963, left column and Figure 2).

Therefore, Arguello *et al.*, teach all limitations recited in claim 2.



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***Conclusion***

11. No claim is allowed.

12. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is (571)273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (571)272-0746. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen, can be reached on (571)272-0731.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Frank W Lu /,  
Primary Examiner, Art Unit 1634  
June 21, 2010